



## FOLDING BED WITH IMPROVED CENTRAL DOLLY

### BACKGROUND OF THE INVENTION

#### 1. Field of the invention

5       The present invention to folding beds and more particularly concerns a folding bed with an improved central dolly.

#### 2. Description of the prior art

10       It is known that folding beds with a central dolly essentially comprise three mutually hinged parts, namely a central part consisting of the dolly, and two side parts connected to the central one so as to be pivotable between a substantially horizontal position, in unfolded or open condition of the bed, and a substantially vertical position, in folded or closed condition of the bed.

15       Both the upper part of the dolly and the side parts of the bed are equipped with means, for instance wooden staves, defining a bed plane in open condition of the bed. The side parts comprise a respective frame to which the staves are secured, and suitable support means connected to the frame near the end remote from  
20       the dolly and arranged to keep the side parts at the same level as the central part in open condition of the bed.

      At present, the dolly is made by two suitably spaced tubular bar members bent to form a U with an elongated base. Such members are secured to each other by two pressed steel plate  
25       pieces horizontally arranged on top of the stems of U-shaped tubular bar.

      Said pressed steel plate pieces laterally extend at both sides of the top of the stems of the respective U-shaped tubular bar member and seats for the pivotal connection of the side parts of the  
30       folding bed are formed in such extensions.

      The shape of the seats in said extensions, together with a

suitable choice of the length of the portion of the side part frame extending beyond the pivotal axis, give rise to the known coupling whereby upward rotation of the side parts (for closing the bed) is allowed, whereas rotation of the side parts beyond the plane of the central part is impossible.

The known folding beds have a number of drawbacks.

The dolly is expensive to manufacture and strongly affects the production costs of the folding beds. Moreover, the pressed steel plate pieces in the dolly and also the kind of coupling provided therein give rise to a great risk for the safety of the persons using the folding beds, due to the presence of sharp edges and the easy accessibility to the hinged parts while they are moving.

Also, the commercially available folding beds equipped with the central dollies described above require, for assembling, the use of tools which are available to the manufacturers but not to the ordinary users. Thus, said beds are to be delivered already in assembled condition so that large storage rooms are required and packaging and transport costs are high.

#### SUMMARY OF THE INVENTION

It is an object of the present invention to provide a folding bed in which the production cost is lower and any risk for the safety is substantially eliminated.

The novel features of the invention lie in that the dolly is made with a different structure. Indeed the dolly is made by two separate parts easy to manufacture and to assemble: one part consists of a trestle made of a single tubular member shaped so as to form two side shoulders and a supporting base; the other part consists of two box members that are mounted on the trestle shoulders and snap fastened thereto.

Said box members have side extensions at the ends of which the seats for the pivotal connection of the side parts of the folding

bed are formed. The hinge pins are conventional cylindrical pegs which can be readily inserted and removed, and they do not comprise rivets or nails as at present employed in connection with the pressed steel plate members of the dollies of the commercially available folding beds.

Advantageously said box members are made of a plastic resin material capable of performing a valid resilient coupling with the top of the shoulders of the supporting trestle. The box members of plastic material can be obtained simply by molding. The coupling of the box members on top of the trestle shoulders readily takes place by a simple snap fitting, as said above.

The folding bed according to the invention no longer includes a dolly with a bearing structure comprising pressed steel plate members that cannot be removed. Thus the folding bed made in accordance with the invention can be stored and delivered with the different parts disassembled, whereby assembling is left to the user. The folding bed in which the parts are left separate moreover requires smaller storage room and lower packaging and transport costs.

The box members to be assembled with the trestle have no sharp surfaces and reduce the gaps that, in the prior art dollies, allow finger introduction into the moving parts. Thus the folding bed according to the invention is safer.

The box members are cheap to manufacture. The cheapness of the folding bed in accordance with the invention is due also to the easiness of construction of the supporting trestle, which is obtained from a single tubular bar suitably bent by means of a conventional tube-bending machine.

The pivotal coupling with the side parts of the folding bed, as stated above, takes place through conventional pegs that can be readily inserted and readily removed. Thus disassembling of the

folding bed into the component parts is as easy as is assembling.

The folding bed made in accordance with the invention, disassembled into its various parts, may be contained in packages of reduced size.

- 5       It is to be appreciated that the trestle of the dolly is so constructed that it can be readily stacked with similar trestles, and this also contributes to reducing storage room and packaging and transport costs.

#### BRIEF DESCRIPTION OF THE DRAWINGS

- 10       The invention will become more apparent from the following description of a preferred embodiment, with reference to the accompanying drawings, in which.

- Fig. 1 shows a folding bed made in accordance with the invention in open condition;
- 15 - Fig. 2 shows the folding bed depicted in Fig. 1 in partially closed condition, with one of the side parts in raised position;
- Fig. 3 shows the folding bed in closed condition, with both side parts in raised position;
- Fig. 4 is a side view of the central dolly of the folding bed;
- 20 - Fig. 5 is an axonometric view from above of the central dolly of the folding bed;
- Fig. 6 is an axonometric view similar to Fig. 5 and shows the central dolly partly disassembled; and
- Fig. 7 is an axonometric view similar to Fig. 5 and shows the  
25       central dolly disassembled.

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

- Referring to Figs. 1 to 3, the folding bed according to the invention comprises a central dolly 1 and two side parts 6 pivotally connected to box members 2 associated with the upper parts of  
30       side members or shoulders 5 of dolly 1. Dolly 1 has base sections 4 to which wheels 10 are fastened. Dolly 1 further is equipped in its

upper part with wooden staves 8, the ends of which are received in housings 11 coupled with the upper face of box members 2. Side parts 6 comprise similar staves 8 received in respective housings 11 coupled with side part frames 6A, consisting for instance of a suitably bent tubular bar.

At their end remote from dolly 1, frames 6A have each an upward directed portion 9 intended to keep the mattress in place. Near said end, frames 6A are also equipped with pivotally connected supports 7 intended to keep the side parts horizontal and at the same level as the upper part of dolly 1 when the bed is in open condition (see Fig. 1). As usual, side parts 6 can be pivoted upward, as shown in Figs. 2 and 3, to close the folding bed. In closed condition, supports 7 are arranged against the lower surface of staves 8, and end portions 9 are mutually in contact, as shown in Fig. 3.

Referring to Figs. 4 to 7, dolly 1 consists of a trestle made of a single tubular bar, bent so as to form two side shoulders 5 and two transversal base sections 4. The upper part of each side shoulder 5 has such size and shape as to allow the snap coupling thereon of a respective box member 2, advantageously made of resiliently yielding molded plastic material.

Box members 2 have downward directed projections 12 engaging the upper portions of the uprights of shoulders 5, and side extensions 3 with end recesses 13 forming the seats for the pivotal coupling of side parts 6 of the folding bed. Reference 14 denotes bores for cylindrical pegs removably connecting box members 2 and side parts 6 of the bed. Similar bores are provided in the tubular bars of the frames of side parts 6, near free ends 6B (Fig. 3) thereof. The shape and size of the recesses are such as to substantially prevent finger introductions between the hinged parts.

Mounted on top of box members 2 are pocket-shaped members 11, they too advantageously of resiliently yielding molded plastics, which form the housings for the ends of staves 8. Housings 11 also are removably coupled with box members 2, 5 through projecting pins 15 (Figs. 6, 7) that fit, for instance are snap coupled, into bores 16 in the upper surfaces of box members 2.

Thanks to such construction, all component parts of the bed can be readily disassembled from one another.

10 It is to be appreciated that the shape of the trestle of dolly 1 allows a ready stacking of a plurality of trestles.

For assembling the folding bed, the two box members 2 are snap mounted onto trestle shoulders 5, thereafter bored terminations 6B of frames 6A of side parts 6 are inserted into seats 15 13 in said box members 2 and are secured to the box members by insertion of pegs into bores 14 and the corresponding bores of terminations 6B. The pegs could have been previously associated with box members 2. Staves 8, associated with their housings 11, can be fitted onto box members 2 and frames 6A of side parts 6 of 20 the bed either before or after connection of the side parts with the box members.

It is clear that the above description is given only by way of non limiting example and that changes and modifications of constructional details are possible without departing from the 25 scope of the invention as defined in the appended claims.